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FILE COVERS 1907 - 4 Jan 2008 VOL 148 ISS 2 FILE LAST UPDATED: 3 Jan 2008 (20080103/ED)

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http://www.cas.org/infopolicy.html

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STR

NODE ATTRIBUTES:
CONNECT IS M3 RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

NODE ATTRIBUTES: CONNECT IS M3 RC AT DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

7 SEA FILE=REGISTRY SSS FUL L1 AND L2 L4

L5 4 SEA FILE=CAPLUS ABB=ON PLU=ON L4

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ANSWER 1 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:

2007:154640 CAPLUS Full-text

DOCUMENT NUMBER:

CORPORATE SOURCE:

146:428048

TITLE:

Bone targeting potential of bisphosphonate-targeted

AUTHOR(S):

Hengst, V.; Oussoren, C.; Kissel, T.; Storm, G. Department of Pharmaceutics, Utrecht Institute for

Pharmaceutical Sciences (UIPS), University of Utrecht,

80082, Neth.

SOURCE:

International Journal of Pharmaceutics (2007), 331(2),

224-227

CODEN: IJPHDE; ISSN: 0378-5173

PUBLISHER:

Elsevier Ltd.

DOCUMENT TYPE:

Journal

LANGUAGE:

English

The main constituent of bone is hydroxyapatite (HAP). Since HAP is only AB. present in 'hard' tissues like bone and teeth, it represents a promising target for the selective drug delivery to bone. Due to the exceptional affinity of bisphosphonates (BP) for HAP, cholesteryl-trisoxyethylenebisphosphonic acid (CHOL-TOE-BP), a new tailor-made BP derivative, was used as bone targeting moiety for liposomes. CHOL-TOE-BP-targeted liposomes were designed for the treatment of bone-related diseases to achieve prolonged local exposure to high concns. of the bioactive compds., thereby enhancing therapeutic efficacy and minimizing systemic side effects. The CHOL-TOE-BPtargeted liposomes were characterized regarding particle size and zeta potential. To study the bone targeting potential of these conjugates, an in vitro HAP binding assay was established. The obtained binding data indicate that CHOL-TOE-BP is useful as targeting device for liposomal drug delivery to bone.

ΙT 861395-84-8

> RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses) (bisphosphonate-targeted liposomes bone targeting potential)

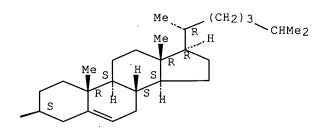
RN 861395-84-8 CAPLUS

Phosphonic acid, $[2-[2-[2-[3\beta)-cholest-5-en-3$ yloxy]ethoxy]ethoxy]-1-hydroxyethylidene]bis- (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

PAGE 1-B



REFERENCE COUNT:

THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS 16 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 2 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:

2005:696929 CAPLUS Full-text

DOCUMENT NUMBER:

143:194146

TITLE:

INVENTOR(S):

Preparation of bisphosphonic acid lipid derivatives

Greb, Wolfgang; Shyhskov, Oleg; Roeschenthaler,

Gerd-Volker; Hengst, Verena

PATENT ASSIGNEE(S):

MCS Micro Carrier Systems G.m.b.H., Germany

SOURCE:

PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

German

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATENT NO.					KIND		DATE		APPLICATION NO.					DATE			
WO.	2005070952			A1 2005080		0804	WO 2005-DE95				20050124						
	W:	ΑE,	AG,	AL,	AM,	AT,	AU,	AZ,	BA,	BB,	BG,	BR,	BW,	BY,	BZ,	CA,	CH,
•		CN,	CO,	CR,	CU,	CZ,	DK,	DM,	DZ,	EC,	EE,	EG,	ES,	FI,	GB,	GD,	GE,
		GH,	GM,	HR,	HU,	ID,	IL,	IN,	IS,	JP,	ΚE,	KG,	ΚP,	KR,	ΚZ,	LC,	LK,
		LR,	LS,	LT,	LU,	LV,	MA,	MD,	MG,	MK,	MN,	MW,	MX,	MZ,	NA,	ΝI,	NO,
		NZ,	OM,	PG,	PH,	PL,	PT,	RO,	RU,	SC,	SD,	SE,	SG,	SK,	SL,	SY,	ТJ,
		TM,	TN,	TR,	TT,	ΤZ,	UA,	UG,	US,	UZ,	VC,	VN,	YU,	ZA,	ZM,	zw	
	RW:	BW,	GH,	GM,	ΚE,	LS,	MW,	MΖ,	NA,	SD,	SL,	SZ,	ΤZ,	UG,	ZM,	ZW,	ΑM,
		ΑZ,	BY,	KG,	ΚZ,	MD,	RU,	ТJ,	TM,	ΑT,	BE,	BG,	CH,	CY,	CZ,	DE,	DK,
		EE,	ES,	FI,	FR,	GB,	GR,	HU,	ΙE,	IS,	IT,	LT,	LU,	MC,	NL,	PL,	PT,
		RO,	SE,	SI,	SK,	TR,	BF,	ВJ,	CF,	CG,	CI,	CM,	GA,	GN,	GQ,	GW,	ML,
•		MR,	NE,	SN,	TD,	ΤG											
DE 102004032781				A1	20050811			DE 2004-102004032781				20040706					
EP 1706415					A1	20061004			EP 2005-714898				20050124				

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS JP 2007518746 T 20070712 JP 2006-549859 20050124 US 2007154537 A1 20070705 US 2006-597059 20060710 PRIORITY APPLN. INFO .: DE 2004-102004003781A 20040123 WO 2005-DE95 20050124

OTHER SOURCE(S):

PO (OH) 2

Þ0 (ОН) 2

MARPAT 143:194146

GI

Disclosed is a bisphosphonic acid derivative, R1C(XR2)[P(:O)(OH)2]2 [I; R1 = H, OH, C1-6-alkyl, C1-6-alkoxy, C1-6-hydroxyalkyl, C1-6-aminoalkyl, C1-6-haloalkyl; X = bond, C1-20-alkylene, (CH3)m(OCR3HCH2)n(O)o, (CR4HCH2O)p; (CH3)q(OCR 5HCH2)r(O)s(CH3)t; R3 = H, Me; m = 0, 1 - 6; n = 1 - 10, especially 1 - 6; o = 0, 1; R4 = H, CH3; p = 1 to 10, particularly 1 to 6; R5 = H, CH3; q = 0, 1 to 6; <math>r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 6; r = 1 to 6; r = 1 to 10, especially 1 to 6; r = 1 to 10, especiall

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IT 861395-80-4P 861395-83-7P 861395-84-8P

861395-85-9P

RL: DGN (Diagnostic use); MOA (Modifier or additive use); SPN (Synthetic preparation); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of bisphosphonic acids for liposomal formulations)

RN 861395-80-4 CAPLUS

CN Phosphonic acid, [(3 β)-cholest-5-en-3-ylhydroxymethylene]bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

$$\begin{array}{c} \text{Me} \\ \text{Me} \\ \text{H} \\ \text{H} \\ \text{O} \\ \text{3} \\ \text{PO} \\ \text{3} \\ \text{H} \\ \text{Ne} \\ \text{R} \\ \text{H} \\ \text{S} \\ \text{H} \\ \text{H} \\ \text{S} \\ \text{H} \\ \text{S} \\ \text{H} \\ \text{R} \\ \text{R}$$

RN 861395-83-7 CAPLUS

CN Phosphonic acid, $[2-[2-[(3\beta)-cholest-5-en-3-yloxy]]$ ethoxy]-1-hydroxyethylidene]bis- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

RN 861395-84-8 CAPLUS

CN Phosphonic acid, $[2-[2-[2-[3\beta)-cholest-5-en-3-yloxy]ethoxy]ethoxy]-1-hydroxyethylidene]bis- (CA INDEX NAME)$

Absolute stereochemistry.

PAGE 1-A

PAGE 1-B

RN 861395-85-9 CAPLUS

CN Phosphonic acid, $[2-[(3\beta)-cholest-5-en-3-yloxy]-1-hydroxyethylidene]bis-(9CI) (CA INDEX NAME)$

Absolute stereochemistry.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:320383 CAPLUS Full-text

DOCUMENT NUMBER: 135:77015

TITLE: Novel Synthesis of Bis(phosphonic acid)-Steroid

Conjugates

AUTHOR(S): Page, Philip C. B.; McKenzie, Michael J.; Gallagher,

James A.

CORPORATE SOURCE: Department of Chemistry, Loughborough University,

Loughborough Leicestershire, LE11 3TU, UK

SOURCE: Journal of Organic Chemistry (2001), 66(11), 3704-3708

CODEN: JOCEAH; ISSN: 0022-3263

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal LANGUAGE: English

OMULE COLLEGE (C) . CICEROM 135.7

OTHER SOURCE(S): CASREACT 135:77015

GΙ

Ι

An efficient synthesis has been realized for several members of a new class of potential bone resorption inhibitors, e.g. I and II, consisting of steroidal estrogenic units linked at the 3 and 17 positions to a geminal bisphosphonate moiety through an ester linkage of variable length. The convergent synthesis utilizes benzyl bisphosphonates, transesterification, and Meldrum's acid chemical and has the potential to allow many estrogenic derivs. as well as other biol. active compds. to be coupled to the geminal bisphosphonate moiety.

RL: SPN (Synthetic preparation); PREP (Preparation) (novel synthesis of bis(phosphonic acid)-steroid conjugates)

RN 346722-67-6 CAPLUS

CN Pregn-5-en-20-one, 3-[4,4-bis(diethoxyphosphinyl)-1-oxobutoxy]-, $(3\beta)-(9CI)$ (CA INDEX NAME)

Absolute stereochemistry.

REFERENCE COUNT:

71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2008 ACS on STN ACCESSION NUMBER: 1994:31024 CAPLUS <u>Full-text</u>

DOCUMENT NUMBER:

120:31024

TITLE:

Preparation of steroid-methylenebis(phosphonate)conjug

ates as bone resorption inhibitors

January 4, 2008

INVENTOR(S): Ueno, Hiroaki; Kadowaki, Syuchiro; Kamizono, Akihito;

Morioka, Masahiko; Mori, Akihisa

PATENT ASSIGNEE(S): Mitsubishi Kasei Corp., Japan

SOURCE: Eur. Pat. Appl., 55 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 555845	A2	19930818	EP 1993-102143	19930211
EP 555845 R: AT, BE, CH,	DE DK	19960131	, GR, IE, IT, LI, I	LII NI. PT SE
JP 05286993	A A	19931102	JP 1993-21477	19930209
JP 2746041	B2	19980428	~~ 1000 0000104	10020010
CA 2089194. CA 2089194	A1 C	19930815 20030701	CA 1993-2089194	19930210
US 5391776	A .	19950221	US 1993-15800	19930210
PRIORITY APPLN. INFO.:			JP 1992-28497	A 19920214
OTHER SOURCE(S):	MARPAT	120:31024		
91				

R3OACH[P(O) (OR) 2]2 [A = CO[NH(CHR1)yYpCO]mNH, COZ1xZqONH, (CH2)kZ2(CH2)1, CO(CH2)n; R = H, alkyl; R1 = H, alkyl, aryl, etc.; R3 = steroid residue; Y, Z = O or NH; Z1 = (substituted) vinylene; Z2 = (cyclo)alkylene, phenylene; l, m, k = 0-5; n = 0-10; p, q, x = 0 or 1; yr = 1-3] were prepared as bone resorption inhibitors. Thus, 17 β -hydroxy-3- methoxymethoxy-1,3,5-estratriene was condensed with N,N'- carbonyldiimidazole and the product condensed with H2NCH2CO2Me to give, after saponification, R3O2CNHCH2CO2H (R3 = estratrienyl group Q; R4 = CH2OMe) which was condensed with H2NCH[P(O) (OEt)2]2 to give, after deprotection, R3O2C(NH)9CH2CONHCH[P(O) (OH)2]2 (R3 = Q, R4 = H) (I; q = 1). Similarly prepared I (q = 0) showed significant bone resorption inhibitory action (data given) in ovariectomized rats at 40 µg/kg s.c./day for 28 days.

IT 151869-65-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of bone resorption inhibitor)

RN 151869-65-7 CAPLUS

CN Pregn-5-en-20-one, 3-[4-[[bis(diethoxyphosphinyl)methyl]amino]-1,4-dioxobutoxy]-, (3β) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.

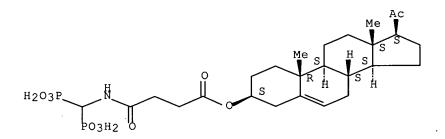
IT 151869-41-9P

RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of, as bone resorption inhibitor)

RN 151869-41-9 CAPLUS

CN Pregn-5-en-20-one, $3-[4-[(diphosphonomethyl)amino]-1,4-dioxobutoxy]-, (3<math>\beta$)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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FILE CONTENT: 1961-PRESENT VOL 148 ISS 1 (20071228/ED)

SOME MARPAT RECORDS ARE DERIVED FROM INPI DATA FOR 1961-1987

MOST RECENT CITATIONS FOR PATENTS FROM MAJOR ISSUING AGENCIES (COVERAGE TO THESE DATES IS NOT COMPLETE):

US 2007270387 22 NOV 2007 DE 102006046922 15 NOV 2007 ΕP 1852435 07 NOV 2007 JΡ 2007299852 15 NOV 2007 WO 2007130704 15 NOV 2007 GB 2437429 24 OCT 2007 2900926 16 NOV 2007 FR RU 2310676 20 NOV 2007 2584745 13 OCT 2007 CA

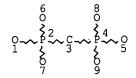
Expanded G-group definition display now available.

Effective December 15th the iteration and answer limits in MARPAT have increased from 100,000 to 200,000 for both on-line and batch searches. For more information on MARPAT search limits, type HELP SLIMITS at an arrow prompt.

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L1

STR



NODE ATTRIBUTES:

CONNECT IS M3 RC AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE L2 STR

NODE ATTRIBUTES:

CONNECT IS M3 RC AT 6
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED NUMBER OF NODES IS 18

STEREO ATTRIBUTES: NONE

L4 7 SEA FILE=REGISTRY SSS FUL L1 AND L2 L5 4 SEA FILE=CAPLUS ABB=ON PLU=ON L4

L7 1173 SEA FILE=MARPAT SSS FUL L1

L10 4 SEA FILE=MARPAT SUB=L7 SSS FUL L2

L11 2 SEA FILE=MARPAT ABB=ON PLU=ON L10 NOT L5

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L11 ANSWER 1 OF 2 MARPAT COPYRIGHT 2008 ACS on STN ACCESSION NUMBER: 134:178396 MARPAT Full-text Synthesis, activity and formulations of pharmaceutical TITLE:

compounds for treatment of oxidative stress and/or

endothelial dysfunction

Del Soldato, Piero INVENTOR(S):

PATENT ASSIGNEE(S):

Nicox S.A., Fr.

SOURCE:

PCT Int. Appl., 94 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 1

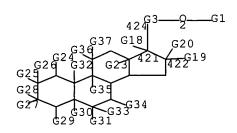
PATENT INFORMATION:

I	PATENT NO.					KIND DATE							DATE					
		2001012584 2001012584			A2 20		2001	20010222		WO 2000-EP7225				 5	20000727			
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		A 2381409 R 2000013264			A1 20010222 A 20020416				CA 2000-2381409 BR 2000-13264			20000727						
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		2002003939 2003515526		T		20030520			HU 2002-3939 JP 2001-516885			20000727						
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		7186					2007	0306				02-4			2002	0207		
N	OV	2002	0006	23	Α		2002			N	O 2 0	02-6	23		2002			
		2002			А		2002					02-P		9	2002	0211		
P	U <i>P</i>	2005	2028	24	A.	L	2005	0721		Α	J 20	05-2	0282	4	2005	0628		
		2006			Α		2007	0608				06-C			2006	0530		
F	KR	7603	94		В	l	2007	0919				06-7			2006	1116		
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												02-C			2000			
										W	20	00-E	P722	5	2000	0727		

US 2002-48469 20020207 KR 2002-701883 20020209

AB Compds. or their salts of general formula (I): A-B-N(O)s wherein: s is an integer equal to 1 or 2; A = R-T1-, wherein R is the drug radical and T1 = (CO)t or (X)t', wherein X = O, S, NR1c, R1c is H or a linear or branched alkyl or a free valence, t and t' are integers and equal to zero or 1, with the proviso that t = 1 when t' = 0; t = 0 when t' = 1; B = -TB -X2-O- wherein TB = (CO) when t = 0, TB = X when t' = 0, X being as above defined; X2, bivalent radical, is such that the precursor drug of A and the precursor of B meet resp. the pharmacol. tests described in the description. Synthesis, activity and formulations of pharmaceutical compds. for treatment of oxidative stress and/or endothelial dysfunction are disclosed. The precursors are such as to meet the pharmacol. test reported in the description.

MSTR 1B



G2 = 425-421 426-7

45504542

G3 = 6-421 9-2

G2---G5---G(0)-G4

Patent location:

claim 1

Note:

or salts

Note:

additional ring formation also claimed

L11 ANSWER 2 OF 2 MARPAT COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER:

117:212787 MARPAT Full-text

TITLE:

Preparation and formulation of

[bis(phosphono)butylaminocarbonyloxy]estratriene and

analogs for treatment of bone disease

INVENTOR(S):

Saari, Walfred S.; Rodan, Gideon A.; Fisher, Thorsten

E.; Anderson, Paul S.

PATENT ASSIGNEE(S):

Merck and Co., Inc., USA Eur. Pat. Appl., 21 pp.

SOURCE:

CODEN: EPXXDW

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT:

PATENT INFORMATION:

PATE	NT NO.	KIND	DATE	APE	PLICATION NO.	DATE	
EP 4	96520	A1	19920729	 EP	1992-300291	19920114	
		DE, FR, G	B, IT, LI, N				
CA 2	059421	A1	19920723	CA	1992-2059421	19920115	
JP 0	4352795	А	19921207	JP	1992-8786	19920122	
JP Ó	7035395	В	19950419				
US 5	183815	A	19930202	US	1992-839741	19920219	
PRIORITY	APPLN. I	NFO.:		US	1991-644178	19910122	
GT							

Compds. ABC [A = residue of a hydroxy-containing steroidal hormone having human bone resorption-antagonist activity or bone formation-stimulatory activity; C = residue of an amino- or hydroxyalkyl-1,l-bis(phosphonate) having human bone affinity; B = covalent linkage connecting A through the hydroxyl moiety and C through the amino or hydroxyl moiety, which linkage can hydrolyze in the human body in the vicinity of bone to release steroidal hormone A] were prepared for treatment of bone disorders (no data). Thus, [(Me2CHO)2P(O)]2CHR (I; R = H), was condensed with CH2:CHCN and the product hydrogenated to give I [R = (CH2)3NH2], which was condensed with 3-benzyloxy-17 β -chlorocarbonyloxyestra-1,3,5(10) - triene (preparation given) to give, after deprotection, title compound II.

II

MSTR 1A

$$G1 = 267$$

Derivative:
Patent location:

and pharmaceutically acceptable salts or esters claim $\ensuremath{\text{1}}$

MSTR 1B

G1----G3-----G2

G1 = 507

Derivative:
Patent location:

and pharmaceutically acceptable salts or esters claim $\ensuremath{\mathbf{1}}$

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(FILE 'HOME' ENTERED AT 16:20:02 ON 04 JAN 2008)

FILE 'REGISTRY' ENTERED AT 16:20:23 ON 04 JAN 2008

L1 STR

L2 STR

L3 1 SEA SSS SAM L1 AND L2

D SCA

L4 7 SEA SSS FUL L1 AND L2

FILE 'CAPLUS' ENTERED AT 16:22:18 ON 04 JAN 2008

L5 4 SEA ABB=ON PLU=ON L4

FILE 'MARPAT' ENTERED AT 16:22:53 ON 04 JAN 2008

L6 50 SEA SSS SAM L1 L7 1173 SEA SSS FUL L1

L8 1172 SEA ABB=ON PLU=ON L7/COM

L9 0 SEA SUB=L7 SSS SAM L2

L10 4 SEA SUB=L7 SSS FUL L2

L11 2 SEA ABB=ON PLU=ON L10 NOT L5

FILE 'CAPLUS' ENTERED AT 16:25:21 ON 04 JAN 2008
D QUE L4

FILE 'CAPLUS' ENTERED AT 16:25:57 ON 04 JAN 2008

D QUE L5

D L5 IBIB ABS HITSTR TOT

FILE 'MARPAT' ENTERED AT 16:27:15 ON 04 JAN 2008 D QUE L11 D L11 IBIB ABS QHIT TOT